

Amendments to the Claims:

The following Listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Original) A method of making a ceramic fiber composite comprising:
 - forming a green substrate from components comprising ceramic fibers;
 - impregnating the green substrate with a first impregnation dispersion to provide an impregnated substrate, wherein the first impregnation dispersion comprises water, a nanoclay, and at least one of a ceramic precursor material or a ceramic material;
 - drying the impregnated substrate to provide a dried substrate;
 - calcining the dried substrate to form a calcined substrate; and
 - firing the calcined substrate to form a ceramic fiber composite comprising ceramic fibers bonded together by an at least partially ceramic binder, wherein the ceramic fiber composite has a porosity of less than 65 percent.
2. (Original) A method according to claim 1, wherein the green substrate is formed from components comprising ceramic fibers and an organic binder material.
3. (Original) A method according to claim 1, wherein the at least partially ceramic binder comprises chemically stabilized β -crystobalite.
4. (Original) A method according to claim 1, wherein the chemically stabilized β -crystobalite comprises calcium.
5. (Original) A method according to claim 1, further comprising impregnating a second dispersion into at least one of the dried, calcined, or fired substrates, wherein the second dispersion comprises at least one of a ceramic precursor material or a ceramic material.

6. (Original) A method according to claim 5, wherein the second dispersion further comprises at least one of a catalyst or a nanoclay.

7. (Original) A method according to claim 1, further comprising perforating the dried substrate.

8. (Original) A method according to claim 1, further comprising perforating the ceramic fiber composite.

9. (Original) A method according to claim 1, wherein the ceramic particles comprise an oxide of at least one of aluminum, zirconium, or silicon.

10. (Original) A method according to claim 1, wherein the first impregnation dispersion further comprises a surfactant.

11. (Original) A method according to claim 10, wherein the surfactant is ionic.

12. (Original) A method according to claim 1, wherein the first impregnation dispersion further comprises a viscosity modifier.

13. (Original) A method according to claim 1, wherein the porosity of the ceramic fiber composite is less than 60 percent.

14. (Original) A method according to claim 1, wherein the porosity of the ceramic fiber composite is less than 40 percent.

15. (Original) A method according to claim 1, wherein the porosity of the ceramic fiber composite is less than 20 percent.

16. (Original) A method according to claim 1, further comprising at least one of molding or shaping the green substrate.

17. (Original) A method according to claim 1, wherein the first impregnation dispersion comprises at least one of a metal oxide or a metal oxide precursor.

18. (Original) A method according to claim 17, wherein at least one the metal oxide or the metal oxide precursor is colloidal.

19. (Original) A method according to claim 1, wherein the first impregnation dispersion comprises silicon carbide.

20. (Original) A method according to claim 19, wherein the first impregnation dispersion further comprises at least one of colloidal boehmite, colloidal zirconia, or colloidal silica.

Claims 21 ~ 37. (Canceled)